

# **Barren-ground Caribou Management in the Northwest Territories: An Independent Peer Review Alberta Research Council**



**Management Response  
Environment and Natural Resources**

May 2009



Northwest  
Territories Environment and Natural Resources



## Management Response and Action Plan

### Objective of Independent Peer Review

The Minister of Environment and Natural Resources (ENR) requested the Alberta Research Council, as an independent research body, to conduct an independent peer review of ENR's barren-ground caribou survey methodology and interpretation of long-term caribou population trends. The review had three objectives:

1. Assess whether ENR's application of herd-based population management is scientifically valid, and comparable to management employed by other North American jurisdictions responsible for caribou management.
2. Assess whether ENR's caribou survey methods – notably photography of post-calving aggregations and photographic transect surveys of calving grounds – are scientifically valid and reliable ways of estimating herd size of barren-ground caribou, comparable to other jurisdictions.
3. Evaluate ENR's existing caribou monitoring and surveys, and determine whether the data and analyses from population surveys and related information provide sufficient evidence to support a decline in barren-ground caribou populations.

### Peer Review Conclusion

The peer review of the existing data did not reveal any evidence that the observed decline in some herds is an artifact of neglect or intent by ENR biologists. The existing scientific data are subject to improvement but do tend to support a decline in the Bathurst, Bluenose-East, Bluenose-West and Cape Bathurst herds as defined by ENR. Until more consistent and more comprehensive methods for multi-herd surveying and demographic research are employed, managing on the basis of a decline is warranted based on the existing data and the precautionary principle.

## Summary of Findings and Recommendations

The main findings of the peer review were:

1. Defining caribou herds by calving ground affiliation is consistent with current practice. However, numbers of collared caribou should be increased for demographic estimates for Bluenose herds and for range determination for other herds.
2. ENR's caribou survey methods have been consistent with common practice. However, irregular survey frequency and the use of different methods (such as calving and post-calving photographic surveys) across herds hampers population comparisons across space and time.
3. The existing scientific evidence better support a decline in the Bathurst, Cape Bathurst, Bluenose-East and Bluenose-West barren-ground caribou herds than alternative explanations, such as mass movement, herd splitting or a negative bias in population estimate compounded through time. Managing on the basis of a decline is a sound precautionary conservation measure and is justified by existing data.

Nine recommendations were provided to help the Northwest Territories (NWT) achieve the most scientifically defensible caribou research and management program possible.

## Management Response

The Minister of Environment and Natural Resources accepts the findings of the independent peer review and recommendations of the report. The Government of the Northwest Territories (GNWT) is pleased to note the conclusion, with limited exceptions, verifies the approach ENR has used to collect and interpret information is sound. The review also affirms that caribou herds are in decline, which is consistent with what traditional users in the NWT and Nunavut have been saying.

ENR will review the recommendations with wildlife co-management partners. During the past year, ENR has independently incorporated some of the recommendations into the caribou research and management program. ENR recognizes that both traditional knowledge and scientific knowledge are used to develop management recommendations and this independent peer review was restricted to improving scientific information that ENR collects. ENR will implement the attached action plan primarily through the next Five-year NWT Barren-ground Caribou Management Strategy (2010-2015).

ENR appreciates the recommendations which will improve its barren-ground caribou monitoring and management program.

## Management Response and Action Plan

The Deputy Minister of Environment and Natural Resources has overall responsibility for the Action Plan.

Recommendation	Response and Action Plan	Responsibility	Target Date
1. Substantially increase collaring efforts for all caribou herds.	<p>Radio collars are used for many purposes, such as determining general movement and range use patterns, fidelity to calving grounds and other seasonal ranges, locating caribou for population surveys and composition surveys, estimating caribou survival rates, and documenting habitat use and land use. The number of collars is determined by three factors:</p> <ul style="list-style-type: none"> <li>▪ what type of information is being collected;</li> <li>▪ level of support from communities; and</li> <li>▪ costs to purchase and deploy collars and obtain data.</li> </ul> <p>ENR will take the following actions in relation to this recommendation:</p> <ol style="list-style-type: none"> <li>a. Where collars are required to obtain reliable information (e.g. post-calving photographic surveys, survival rates), undertake analyses to identify minimum number of collars required (e.g. ENR reviewed previous post-calving surveys to determine minimum number of collars required for 2009 post-calving surveys).</li> <li>b. Assess other methods that do not require collaring or require fewer collars to collect reliable information.</li> <li>c. Review recommendations to increase minimum collar numbers per herd with co-management partners.</li> </ol>	ENR and co-management boards	2010
2. Create a standardized, regularly scheduled monitoring program to improve long-term planning and reporting on caribou research.	<p>ENR agrees with this recommendation.</p> <p>The following actions will be taken:</p> <ol style="list-style-type: none"> <li>a. Undertake analyses to determine how frequently data must be collected to assess trends in barren-ground caribou numbers.</li> <li>b. Review proposed monitoring program with co-management partners.</li> <li>c. Incorporate a regularly scheduled monitoring program into the next Five-year Barren-ground Caribou Management Strategy 2010-2015.</li> </ol>	ENR	2009

Recommendation	Response and Action Plan	Responsibility	Target Date
<p>3. Increase focus on obtaining demographic data on all caribou herds.</p>	<p>This recommendation is related to the previous one (monitoring of caribou herds should include key measures, such as calf recruitment, cow survival and population size, determined with a regular frequency).</p> <p>ENR agrees with this recommendation. The following actions will be taken to implement it:</p> <ul style="list-style-type: none"> <li>a. Work with experts in population monitoring and statistics and ENR biologists to define a base or minimum set of population surveys, recruitment surveys and related demographic measures to be monitored for all NWT barren-ground caribou herds. These will be incorporated in the next Five-year Barren-ground Caribou Management Strategy.</li> <li>b. Increase cooperation with neighbouring jurisdictions, particularly Nunavut, so that programs for shared herds are complementary and consistent.</li> </ul>	ENR	2009
<p>4. Incorporate population modeling into caribou management programs.</p>	<p>ENR agrees with this recommendation. This action is contained in the current NWT Barren-ground Caribou Management Strategy (2006-2010). ENR currently has caribou population modeling underway for the Bathurst, Bluenose-West and Bluenose-East herds. Modeling is being done in collaboration with two co-management boards.</p> <p>ENR will build on this work by taking the following action:</p> <ul style="list-style-type: none"> <li>a. Continue working with co-management boards to use population modeling, when appropriate, to assess management actions.</li> </ul>	ENR	2009

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5. Provide internal and external peer reviews for all survey reports.	<p>ENR agrees with this recommendation. Internal peer reviews of survey reports are a standard part of doing business.</p> <p>ENR will take the following actions:</p> <ul style="list-style-type: none"> <li>a. Use the Request for Proposal process to contract outside expertise to provide advice on survey design and review statistical analyses in all reports.</li> <li>b. Continue to use scientific journal publications and presentation of papers at conferences as methods for obtaining external peer reviews.</li> </ul>	ENR	2010
6. Publicly report survey and research results immediately and transparently.	<p>ENR agrees that survey and research results should be reported as soon as possible and in a transparent manner.</p> <p>ENR will take the following actions:</p> <ul style="list-style-type: none"> <li>a. Report initial survey and research results as soon as possible to co-management boards and communities. This has been current practice of ENR.</li> <li>b. ENR will develop standard formats (templates) for common surveys (e.g. calving ground delineation, spring calf recruitment surveys, population estimate surveys) to publicly report results as soon as possible. Post all completed reports and journal publications on ENR website to allow for public access.</li> </ul>	ENR	2009



Recommendation	Response and Action Plan	Responsibility	Target Date
<p>7. Develop a territory-wide, consistent and strategic approach to ENR's caribou research program, with centralized coordination.</p>	<p>ENR agrees with this recommendation, which is consistent with the existing NWT Barren-ground Caribou Management Strategy (2006-2010).</p> <p>ENR will take the following actions:</p> <ul style="list-style-type: none"> <li>a. Prepare the next Five-year NWT Barren-ground Caribou Management Strategy (2010-2015).</li> <li>b. Review new draft strategy with co-management partners and other stakeholders at a January 2010 Caribou Summit.</li> <li>c. Make the Manager, Wildlife Research and Monitoring, accountable for coordinating regional monitoring programs by ensuring annual workplans are prepared and allocating funding accordingly.</li> <li>d. Work with co-management partners and other jurisdictions to coordinate ENR research studies with other caribou research programs.</li> </ul>	ENR	2009
<p>8. Formulate caribou management decisions within an adaptive management framework.</p>	<p>ENR agrees with the principle of this recommendation. In settlement regions, co-management boards develop caribou management recommendations based on information provided by traditional and scientific knowledge and management guidelines in land claim agreements. These decisions are reviewed as new information is brought forward. ENR notes management decisions may differ between regions and when herds are increasing, stable or decreasing.</p> <p>ENR will take the following actions:</p> <ul style="list-style-type: none"> <li>a. Provide results from 2009 surveys to update herd estimates to co-management partners to review existing management actions.</li> <li>b. Continue to monitor herd demography and other factors to provide information to assess and develop management actions.</li> </ul>	ENR and co-management boards	Annually



Recommendation	Response and Action Plan	Responsibility	Target Date
9. Form partnerships to increase resources dedicated to caribou research.	<p>ENR agrees with this recommendation. Over the years, ENR has sponsored research on caribou and other key wildlife species, particularly by graduate students, who are able to devote extended effort to research questions.</p> <p>ENR will take the following actions:</p> <ul style="list-style-type: none"> <li>a. Continue to seek and form partnerships to increase resources for caribou research. The existing Five-year NWT Barren-ground Caribou Management Strategy (2006-2010) is based on this principle. ENR has been fortunate to secure funding every year from other partners, such as government agencies, co-management boards, diamond mines and environmental non-government organizations.</li> <li>b. Continue to sponsor, collaborate with and define research questions for academic researchers.</li> <li>c. ENR will host the next Arctic Ungulate Conference in August 2011 and will invite presentations evaluating the cyclic nature of barren-ground caribou populations.</li> </ul>	ENR	Annually

